

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently amended) A golf ball including a composition comprising:
an unsaturated polymer;
a cross-linking agent comprising a peroxide;
a peptizer ~~including a non-metal salt of an organic sulfur compound~~ selected from the group consisting of an amine salt of pentachlorothiophenol, an ammonium salt of pentachlorothiophenol, and mixtures thereof; and
an accelerator.
2. (Original) The golf ball according to claim 1, wherein the composition includes greater than about 0.1 part by weight of the peptizer per 100 parts by weight of the unsaturated polymer.
3. (Original) The golf ball according to claim 1, wherein the composition includes greater than about 0.5 part by weight of the peptizer per 100 parts by weight of the unsaturated polymer.
4. (Original) The golf ball according to claim 1, wherein the composition includes greater than about 2.5 parts by weight of the peptizer per 100 parts by weight of the unsaturated polymer.
5. (Canceled)
6. (Original) The golf ball according to claim 1, wherein the composition includes from about 0.1 part to about 10 parts by weight of the accelerator per 100 parts by weight of the unsaturated polymer.

7. (Original) The golf ball according to claim 1, wherein the composition includes from about 0.2 part to about 5 parts by weight of the accelerator per 100 parts by weight of the unsaturated polymer.

8. (Original) The golf ball according to claim 1, wherein the composition includes from about 0.5 part to about 1.5 parts by weight of the accelerator per 100 parts by weight of the unsaturated polymer.

9. (Original) The golf ball according to claim 1, wherein the accelerator is selected from the group consisting of 2-mercaptobenzothiazole and a salt of 2-mercaptobenzothiazole.

10. (Original) The golf ball according to claim 1, wherein the composition includes from about 0.05 part to about 5 parts by weight of the cross-linking agent per 100 parts by weight of the unsaturated polymer.

11. (Original) The golf ball according to claim 1, wherein the composition includes from about 0.2 part to about 3 parts by weight of the cross-linking agent per 100 parts by weight of the unsaturated polymer.

12. (Original) The golf ball according to claim 1, wherein the composition includes from about 0.5 part to about 1.5 parts by weight of the cross-linking agent per 100 parts by weight of the unsaturated polymer.

13. (Original) The golf ball according to claim 1, wherein the unsaturated polymer is selected from the group consisting of 1,2-polybutadiene, cis-1,4-polybutadiene, trans-1,4-polybutadiene, cis-polyisoprene, trans-polyisoprene, polychloroprene, polybutylene, styrene-butadiene rubber, block copolymer of styrene and butadiene, block copolymer of styrene and isoprene, nitrile rubber, silicone rubber, polyurethane, and mixtures thereof.

14. (Previously Presented) The golf ball according to claim 1, wherein the composition further comprises one or more ingredients selected from the group consisting of UV stabilizers, photo stabilizers, antioxidants, colorants, dispersants, mold releasing agents, processing aids, and fillers.

15. (Previously Presented) The golf ball according to claim 14, wherein one or more ingredients include a filler that adjusts a density of the composition.

16. (Previously Presented) The golf ball according to claim 14, wherein the one or more ingredients include a filler selected from the group consisting of zinc oxide, tungsten, and barium sulfate.

17. (Previously Presented) The golf ball according to claim 14, wherein the one or more ingredients include a filler and the composition includes from about 10 parts to about 80 parts by weight of the filler per 100 parts by weight of the unsaturated polymer.

18. (Original) The golf ball according to claim 1, wherein the composition further comprises a compound selected from the group consisting of an unsaturated carboxylic acid, a metal salt of the unsaturated carboxylic acid, and mixtures thereof.

19. (Original) The golf ball according to claim 18, wherein the composition includes from about 20 parts to about 60 parts by weight of the compound per 100 parts by weight of the unsaturated polymer.

20. (Original) The golf ball according to claim 1, further comprising:
a core; and
a cover layer over the core;
wherein at least one of the core and the cover layer includes the composition.

21. (Original) The golf ball according to claim 20, wherein the core includes:
an inner core; and
an outer core encasing the inner core.

22. (Original) The golf ball according to claim 20, wherein the core includes a material in liquid form.

23. (Original) The golf ball according to claim 20, further comprising a layer of rubber thread located between the core and the cover layer.

24. (Original) The golf ball according to claim 1, further comprising:
a core;
at least one intermediate layer over the core; and
a cover layer over the outermost intermediate layer;
wherein at least one of the core, the at least one intermediate layer, and the cover layer includes the composition.

25. (Currently amended) A golf ball including a composition comprising:
an unsaturated polymer;
a cross-linking agent comprising a peroxide;
a peptizer ~~including a non-metal salt of an organic sulfur compound~~ selected from the group consisting of an amine salt of pentachlorothiophenol, an ammonium salt of pentachlorothiophenol, and mixtures thereof; and
an accelerator;
wherein the composition includes:
from about 0.2 part to about 3 parts by weight of the cross-linking agent per 100 parts by weight of the unsaturated polymer,
greater than about 0.5 part by weight of the peptizer per 100 parts 10 by weight of the unsaturated polymer, and
from about 0.2 part to about 5 parts by weight of the accelerator per 100 parts by weight of the unsaturated polymer.

26. (Original) The golf ball according to claim 25, wherein the composition includes greater than about 2.5 parts by weight of the peptizer per 100 parts by weight of the unsaturated polymer.

27. (Canceled)

28. (Original) The golf ball according to claim 25, wherein the accelerator is selected from the group consisting of 2-mercaptobenzothiazole and a salt of 2-mercaptobenzothiazole.

29. (Original) The golf ball according to claim 25, wherein the unsaturated polymer is selected from the group consisting of 1,2-polybutadiene, cis-1,4-polybutadiene, trans-1,4-polybutadiene, cis-polyisoprene, trans-polyisoprene, polychloroprene, polybutylene, styrene-butadiene rubber, block copolymer of styrene and butadiene, block copolymer of styrene and isoprene, nitrile rubber, silicone rubber, polyurethane, and mixtures thereof.

30. (Previously Presented) The golf ball according to claim 25, wherein the composition further comprises one or more ingredients selected from the group consisting of UV stabilizers, photo stabilizers, antioxidants, colorants, dispersants, mold releasing agents, processing aids, and fillers.

31. (Previously Presented) The golf ball according to claim 30, wherein the one or more ingredients include a filler that adjusts a density of the composition.

32. (Previously Presented) The golf ball according to claim 30, wherein the one or more ingredients include a filler selected from the group consisting of zinc oxide, tungsten, and barium sulfate.

33. (Previously Presented) The golf ball according to claim 30, wherein the one or more ingredients include a filler and the composition includes from about 10 parts to about 80 parts by weight of the filler per 100 parts by weight of the unsaturated polymer.

34. (Original) The golf ball according to claim 25, wherein composition further comprises a compound selected from the group consisting of an unsaturated carboxylic acid, a metal salt of the unsaturated carboxylic acid, and mixtures thereof.

35. (Original) The golf ball according to claim 34, wherein the composition includes from about 20 parts to about 60 parts by weight of the compound per 100 parts by weight of the unsaturated polymer.

36. (Original) The golf ball according to claim 25, further comprising:
a core; and
a cover layer over the core;
wherein at least one of the core or cover layer includes the composition.

37. (Original) The golf ball according to claim 36, wherein the core includes:
an inner core; and
an outer core encasing the inner core.

38. (Original) The golf ball according to claim 36, wherein the core includes a material in liquid form.

39. (Original) The golf ball according to claim 36, further comprising a layer of rubber thread located between the core and the cover layer.

40. (Original) The golf ball according to claim 25, further comprising:
a core;
at least one intermediate layer over the core; and
a cover layer over the outermost intermediate layer;
wherein at least one of the core, the at least one intermediate layer, and the cover layer includes the composition.

41. (Currently amended) A method for manufacturing a golf ball, the method comprising:

providing:

an unsaturated polymer,

a cross-linking agent comprising a peroxide,

a peptizer ~~including a non-metal salt of an organic sulfur compound~~ selected from the group consisting of an amine salt of pentachlorothiophenol, an ammonium salt of pentachlorothiophenol, and mixtures thereof, and

an accelerator;

preparing a composition from the unsaturated polymer, the cross-linking agent, the peptizer, and the accelerator; and

forming the composition into the golf ball.

Claims 42-47 (Canceled).

48. (Previously Presented) The golf ball according to claim 1, and further comprising a co-cross-linking agent that is a metal salt of an unsaturated carboxylic acid.

49. (Canceled).

50. (Canceled)

51. (Previously Presented) The golf ball according to claim 1, wherein the cross-linking agent is selected from the group consisting of diacetyl peroxide; di-tert-butyl peroxide; dibenzoyl peroxide; dicumyl peroxide; 2,5-dimethyl-2,5-di(benzoylperoxy)hexane; 1,4-bis-(t-butylperoxyisopropyl-)benzene, t-butylperoxybenzoate; 2,5-dimethyl-2,5-di-(t-butylperoxy)hexyne-3; 1,1-bis(t-butylperoxy)-3,3,5 tri-methylcyclohexane; and di-((2,4-dichlorobenzoyl)peroxide).

52. (Previously Presented) The golf ball according to claim 51, wherein the cross-linking co-cross-linking agent is 2,5-dimethyl-2,5-di-(t-butylperoxy)hexyne-3.

53. (Previously Presented) The golf ball according to claim 25, and further comprising a co-cross-linking agent that is a metal salt of an unsaturated carboxylic acid.

54. (Canceled).

55. (Canceled)

56. (Previously Presented) The golf ball according to claim 25, wherein the cross-linking agent is selected from the group consisting of diacetyl peroxide, di-tert-butyl peroxide; dibenzoyl peroxide, dicumyl peroxide; 2,5-dimethyl-2,5-di(benzoylperoxy)hexane; 1,4-bis-(t-butylperoxyisopropyl-)benzene; t-butylperoxybenzoate; 2,5-dimethyl-2,5-di-(t-butylperoxy)hexyne-3; 1,1-bis(t-butylperoxy)-3,3,5 tri-methylcyclohexane; and di-(2,4-dichlorobenzoyl)peroxide.

57. (Previously Presented) The golf ball according to claim 56, wherein the cross-linking agent includes 2,5-dimethyl-2,5-di-(t-butylperoxy)hexyne-3.

Claims 58-62 (Canceled).

63. (Previously Presented) The golf ball according to claim 51, wherein the cross-linking agent includes 1,1-bis(t-butylperoxy)-3,3,5 tri-methylcyclohexane.

64. (Previously Presented) The golf ball according to claim 56, wherein the cross-linking agent includes 1,1-bis(t-butylperoxy)-3,3,5 tri-methylcyclohexane.